How to Sell a Railway: Lessons on the privatization of Three Dutch Railway Projects

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EJTIR, **7**, no. 3 (2007), pp. 201-222

Received: October 2006
Accepted: September 2007

In this contribution, we provide a comparative analysis of the Dutch government's attempts to realize private investments in three national railway mega-projects: the Betuwe Route, a dedicated freight railway line connecting the Rotterdam harbour to the German rail network, the High Speed Line (HSL South) between the Belgian border and Amsterdam and the Zuiderzee Line between Amsterdam and Groningen, for which a private consortium led by Siemens suggests the use of Maglev technology. The privatization of the first two railway lines was attempted for during the nineties and beginning of this decade. In June 2007 operation of the Betuwe Route began. To date, the government has not succeeded in involving private parties in the Betuwe Route. Although the privatization of the HSL South has partly been realized by engaging into a complex mix of contract-arrangements, it has proven difficult to keep under control. Recently operation has been postponed until October 2008.
During the project study of the third railway project, which started in 2000, government again tried to realize privatization while avoiding the mistakes of the earlier two projects. In 2005 government decided not to move forward with the tender procedure and consider alternatives.
Building on theory and earlier experiences with privatization and public private partnerships we compare the three cases with respect to motives for privatization, strategies and results. We seek explanations for the way privatization evolved within each project and generic lessons that can be drawn from the cases.

1. Introduction

In December 2004, the report of the Dutch Parliamentary Inquiry Committee on Infrastructure Projects (the Duivesteijn Committee) was published. This committee had investigated the budget overruns of two large railway projects: (1) the Betuwe Route, which is a freight-transit line that will connect the port of Rotterdam to the German rail network, and (2) the High Speed Line South (HSL-Zuid) between the Belgian border and Amsterdam. The committee also examined whether mistakes that were made in these earlier projects had been avoided in the planning of the Zuiderzee Line between Amsterdam and Groningen, a project that was under preparation at that time.

The committee's report provides a comprehensive picture of problems that the government experienced during the 1990s and the beginning of this decade in its attempts to develop a consistent policy regarding privatization and public-private partnership (PPP) in the field of transport infrastructure (Tweede Kamer, 2004-2005a-f). When government decided in the early nineties to pursue privatization of the first two railway lines, it was far from clear what privatization implied. The general idea was to get private parties to finance the project, or at least part of it. In the course of time privatization strategies were gradually developed and several times drastically changed. Privatization in this contribution is used in a broad sense, referring to the realization of private investments in public projects. Besides full privatization, it also refers to partial privatization: forms of public private partnership. Since in the debates on the projects parties continued to use the term privatization, while referring to partial privatization or public private partnership, we will use these terms as synonyms.

In this contribution, the authors, who were members of the research staff of the Duivesteijn Committee, present a comparative analysis of the objectives, approach and results of each of these three privatization projects, based on the detailed empirical analyses provided by the committee's reports. We seek explanations for how privatization evolved within each of these three projects and lessons that can be drawn from the cases.

This exercise is especially relevant, given that academics have advanced privatization and public-private partnership as a remedy for the irrationality of decision-making in large projects (cf. Teulings and Koopmans, 2004). In a quantitative comparison of an extensive number of large projects in several countries, the Danish planning Professor Flyvbjerg notes that, in the public decision-making process, costs are systematically presented as too low and benefits as too high. The endemic inclination of project advocates to misrepresent these matters causes serious problems in the implementation phase and generates high cost overruns; the average budget overrun for railway projects is approximately 45 percent (Flyvbjerg et al., 2002). The authors suggest involving private parties in public projects as a solution, as it forces the government to:

1. define the project as precisely as possible in its early phases;
2. ensure that all conditions for project realisation are met;
3. ensure that the costs, benefits and risks are clearly analysed and managed (Bruzelius et al., 2002; Flyvbjerg et al., 2003a).

We start this contribution by discussing the features and pros and cons of public preparation of public infrastructure projects versus privatization and public private partnership scenarios. On the basis of these insights we develop the research questions that guided the comparative analysis of the three projects (section 2). We then describe the way the efforts to privatize the Betuwe and the HSL South Lines evolved and the lessons that can be drawn from these experiences (sections 3, 4 and 5). In section 6, we examine the extent to which these lessons

resulted in a more adequate privatization approach in the case of the Zuiderzee Line. Section 7 gives an overview of the most important privatization lessons from these three projects.

Figure 1. Indication of the three projects in the Netherlands

2. Large Infrastructure Projects: Public Decision-making and Private Involvement

Public decision-making on large infrastructure projects is highly problematic, and such projects usually face enormous budget overruns. Given the often profound impacts these projects have on their surroundings, they are often accompanied by considerable societal upheaval. Although budget overruns are due primarily to efforts to mitigate or eliminate objections to a project, attempts to manage costs may also lead to concessions in the quality of the original design. At the same time, the justification of the project is rarely the subject of extensive discussion, and the results of cost-benefit and market analyses are used strategically (Flyvbjerg et al., 2002, 2003a, 2003b, 2004, 2005).
Bruzelius et al. (2002) argue that these problems are due to the nature of public decision-making on infrastructure projects. Government attempts to combine several conflicting roles in such processes. It is simultaneously advocate of specific projects and the authority that allocates limited resources over competing projects. Furthermore, large projects are prestigious; once ministers and members of Parliament have committed to a project they cannot retract easily without suffering political damage (‘t Hart, 1998).

2.1 Public decision-making as a problem

By keeping the development and realization of a project in its own hands, a government’s

relationships with its contractors, project developers, industries, transport companies and other private parties get perverted. These actors are free to lobby for public means for infrastructure projects without having to carry any risks or contribute financially. Research and engineering bureaus also have interests in these large projects; at the government's request, they produce reports and prognoses without being held accountable for the accuracy of these figures (Nijkamp and Ubbels, 1999).
Citizens and interest groups enter the arena only after the decision to undertake a project has been set in stone. Their veto power may lead to project adjustments in a relatively late stage, which are disproportionately costly. Further, it is difficult for governments to control the costs of projects. Finances tend to get out of hand in the implementation phase, partially because of changing political wish lists and requirements.
Public decision-making about large projects resembles the familiar dance around the governmental cornucopia: a closed circuit of partial interests shifts the costs and risks of a project onto taxpayers and future users (cf. Lowi, 1963; Tweede Kamer, 2004-2005a, e).

2.2 Privatization and Public Private Partnership as a Solution

Flyvbjerg and his colleagues (2003) advocate private involvement as remedy for these public causes of irrational decision-making. In both literature and practice, however, additional reasons for privatization are mentioned (Savas, 2000; Osborne, 2000; Van Ham and Koppenjan, 2001; Akintoye, 2003; Lobina and Hall, 2003), for example:

- mobilizing private investments when public funds are scarce;
- increasing efficiency and value for money, due to the superior project management capacities of private parties;
- realizing optimization in design and innovation in project content due to the early involvement of private expertise.

Although the concepts of privatization and public-private partnership are in common usage, they refer to a wide variety of forms of public-private interactions. We distinguish three broad forms of innovative public-private collaboration: innovative tendering, concessions and the establishment of special-purpose vehicles (Moore, 1994; Whettenhall, 2003; Bennet et al., 2000; Miller, 2000; Ghobadian et al., 2004; Koppenjan, 2005).

- Innovative tendering differs from traditional contracting, as various project activities (e.g., design, build, maintenance and operation) are tendered together. Combining the design and construction phases brings together the expertise for both phases. This allows the contractor to anticipate the impact of design choices on the construction phase, thereby realizing design optimizations and efficiency gains. 'Design & Build' (D&B), 'Design Build & Maintain' (DB&M) and 'Design, Build & Operate' (DB&O) contracts may offer more value for money. These types of contracts transfer the risks that result from the interface between project phases to the contractor, and they change the role of government in public projects. Instead of realizing projects themselves, governments procure products or services and govern from a distance, using a programme of functional instead of detailed requirements.
- Although innovative tendering implies the increased involvement of private parties in public projects, the concepts of privatization and public-private partnerships are reserved for forms of collaboration in which private parties carry financial risks, as in the case of 'Build, Operate and Transfer' (BOT) or 'Design Build Finance Maintain/Operate' (DBFM/O) contracts. Outside Europe, public transport infrastructure is often realized by

BOT-contracts (Walker and Smith, 1995). In such cases, the entire project-development process rests in the hands of private parties, who must recover their investments by demanding user fees (for instance the Herrentunnel in Lübeck and the Warnowtunnel in Rostock, Germany). When the concession period ends, the project is transferred to the government. Combining innovative tendering and private investments increases the ability of private parties to realize design efficiencies. This is the goal of DBFM/O contracting, which was developed in the UK in the 1990s, within the context of the Private Finance Initiative. DBFM/O projects are publicly defined. As in BOT contracts, private parties must recover their investments by requesting user fees. When this is not possible, they receive governmental payments according to their level of performance.

- Private involvement in the provision of public infrastructure can also be realized through the establishment of special-purpose vehicles (SPVs). Governmental and private sectors may both participate in SPVs, and they may thus share the benefits, costs and risks. This arrangement is especially suited for the realization of complex, innovative projects that are initially difficult to define, whereby the risks are not easily divided amongst parties. This form of collaboration is often referred to as the 'alliance model' (Van Ham and Koppenjan, 2002; Akintoye, 2003). Not all SPVs are joint ventures. In the Netherlands, the tunnel under the Westerschelde in the province of Zeeland has been realized and operated by a state-owned company, financed by government (Weening, 2004).

Notions of privatization and public-private partnership thus encompass quite different forms of interaction between the governmental and private sectors. The common denominator is that all of these forms change or increase the involvement of private parties in public projects. In contrast to the connotation of the concept of privatization, these new forms of collaboration neither end nor reduce the role of government in public projects. They do imply, however, a drastic redefinition of the government's role in the realization and operation of public infrastructures.

2.3 Private involvement as a mechanism for disciplining public decision-making

Flyvbjerg and his colleagues (2003) mention the following advantages of private involvement in public projects:

- Private involvement forces the government to consider what it wants to achieve with a project at the outset. The focus of the discussion is not on variants of technical implementation, but on the objectives that the government seeks to accomplish by realizing the project. Third-party involvement and transparency result in the specification of desires and objectives, which subsequently allows the presentation of binding 'programmes of requirements' to private contractors.
- Private involvement improves the distribution of risks. The government does not take financial risks for granted; the risks of construction and operation are borne by companies, while the government bears the political risks.
- The involvement of private capital allows financial institutions to make demands on the private companies, thereby activating mechanisms of private accountability, which improves the efficiency of projects.
- Governments are apparently unable to carry out satisfactory project-selection assessments. The demands that private parties place on such projects provide better criteria for determining whether to undertake construction. Teulings and Koopmans (2004) even claim that, because of the limited positive externalities of railway projects,

the profits that private parties stand to realize are likely to be the only societal gains from such projects. If companies are not interested, therefore, there is no reason to continue with the project.

Flyvbjerg et al. (2003a) recommend involving private parties by organizing the decision-making on infrastructure projects according to the following three chronological steps:

1. The project must be defined precisely, and the conditions that are necessary for success must be fulfilled.
2. When this has been realized, private parties can be involved in such a way that they carry financial risks.
3. Only when private parties are committed will the actual decision to realize the project be taken.

2.4 Experiences with Privatization and Public Private Partnership Scenario's

Whether the high expectations regarding the purifying effects of private involvement in large projects are justified remains to be seen. Experiences with private involvement in transport infrastructure are limited, at least in the Netherlands (General Audit Office, 2002; Kenniscentrum PPS, 2002, 2004a; Van Ham and Koppenjan, 2001, 2002). Currently, government is claiming success in projects that include the water-purification installation in Delfland, the tunnel under the Westerschelde estuary (although no private involvement was realized), road projects (e.g., Sijtwende, A59 and N31) and, of course, the HSL South (Kenniscentrum PPS, 2004b; Evaluation A59, 2003; Evaluation N31, 2004). The list of PPP initiatives that did not result in a contract, is much longer (Van Ham and Koppenjan, 2002; Koppenjan, 2005). International experiences with privatization and public-private cooperation are widely divergent and contested. (Akintoye et al., 2003; Osborne, 2000; Ghobadian et al., 2004; Highway Agency and Private Finance Panel, no year). Successes appear to lie chiefly in the sphere of effectiveness (private investments; value for money, improved project management and innovation). The problems arise especially in the sphere of transparency, legitimacy and accountability. But owing to the complexity of projects and contracts, the uncertainties with which they are surrounded and the limitations of the assessment methods used, the successes are not unquestioned. Tools like the public private comparator and the public sector comparator, used to asses the value for money of PPP initiatives, prove to be easily manipulated (Pollitt, 2002; Hodge and Greve, 2005; National Audit Office, 1998, 2004). Given the long-term contracts involved, which often include operation phase of 15 or even 30 years, assessments of many projects are merely preliminary (cf. Johnstone and Wood, 2001; Ghobadian et al., 2004; Koppenjan and Enserink, 2005).

2.5 Towards an analysis of privatization in three large railway projects

As illustrated above, experiences with PPP vary. What is known, however, is that it is quite difficult for the government to find suitable methods for realizing private investments in these types of projects. It is difficult to manage tender procedures or to build partnerships (Berg et al., 2002; Van Ham and Koppenjan, 2002). The detailed empirical analyses that the Duivesteijn Committee conducted with regard to the three Dutch railway projects provide a unique opportunity for increasing understanding of the mechanisms that are at work in governmental attempts to involve private parties in public projects. The Committee executed a large-scale survey of two projects: Betuwe Route and HSL South. In this survey, the researchers of the Committee made both use of documents in the archives of the Dutch

Ministry of Transport and of information gathered in public hearings with 68 people involved in the two projects, ranging from project managers to (former) ministers (Tweede Kamer, 2004-2005b, c, f). Subsequently, the survey of one project in the decision-making phase – the Zuiderzee Line – was executed with the help of public documentation (Tweede Kamer, 2004-2005d).

In the following sections, we analyse the three cases with the help of the following questions. The questions were derived from the general theoretical notions and practical experiences that have been presented above.

1. What was the government's strategy for privatization? What were government's motives and what forms of privatization were considered?
2. To what extent were the aims of privatization accomplished in practice? Did the process follow the three steps of Flyvbjerg's public-private partnership scenario?
3. How can the process and outcomes of the privatization process be explained? Which factors contributed to success or failure?
4. Which general lessons can be learned from these three cases with regard to private involvement in the realization of public infrastructure projects?

Can the findings from these three rather exceptional Dutch cases in the railway sector be generalized? We have a number of reasons why we think so. First, the method of comparative analysis compels the analyst to look for patterns and similarities, which increases the chance of arriving at generic lessons, rather than emphasizing the uniqueness of one single case. Second, by building the research questions on theoretical notions about privatization in infrastructure and on earlier experiences, the analysis is guided by a frame of reference that exceeds the sectoral and national boundaries within which the cases developed, thus increasing the ability to generalize (compare Yin, 1994). Third, it is necessary to consider the extent to which the peculiarities of the railway sector hinder generalization to other infrastructure sectors. The high investments that are needed to realize the infrastructure and the limited capacity and destinations of this infrastructure make the involvement of private parties anything but self-evident (cf. Pickrell, 1992; Teulings and Koopmans, 2004). The sheer scale of the cases involved adds to the complexity. The relative difficulty of involving private parties in these projects, makes them particularly suited for providing insights in the generic challenges that are at play in infrastructure projects up for privatization and public private partnership. In sections 3 and 4 the privatization of the Betuwe Route and the HSL-South are discussed. After an initial discription of the content of the projects, the privatization strategies and their implementations are discussed (research questions 1 and 2), followed by an initial conclusion. In section 5 a comparison of both processes results in explanations and lessons (research questions 3 and 4). In section 6 we examine the extent to which government learned form these two projects while drawing up its privatization strategy for the Zuiderzeeline, following the same lay out as section 3 and 4. Since this strategy was not implemented, its description is followed by an ex ante evaluation. In the conclusion some generic explanations and lessons are discussed.

3. Privatization and the Betuwe Route[1]

3.1 The Project

Toward the end of the 1980s, a lobby of Rotterdam public officials and companies urged the Dutch government to construct a transport railway line to the German border. This new connection to the European hinterland would strengthen the international competitiveness of the port of Rotterdam. In 1993, the decision was made to construct the Betuwe Route. A change in government in 1995 required reconsideration, but it did not muddy the waters; the decision was reconfirmed, and construction could begin.

At this point, the troubles began. Over time, the Betuwe Route became more and more contested. Societal protest during the decision-making process resulted in expensive adjustments that increased the costs, fuelling doubts about the cost-effectiveness of the project. The transport policy aimed at shifting freight transport form road to rail, seen by the Hermans Committee (1995) as a necessary prerequisite for the economic profitability of the railway, was not implemented. The economic viability of the project was questioned by a number of prominent scientists. The call to reconsider, however, was firmly rejected by the government, which maintained that the project had passed the point of no return. This did not silence the critics. Support for the project dwindled, and it had to be realized within a politicized context. It had been initially hoped that the rail line would be ready in 2000. In 1995 the start of the operation was foreseen in 2005. Eventually a restricted service was started in June 2007. The line will become fully operational by 2008 (Ministry of Transport, 2007a).

3.2 Privatization objectives and strategy

Privatization had been an important goal since the beginning of the Betuwe Route project. Because the government budget could not cover all of the project's costs, a private contribution of approximately 830 million euros was sought, within a total budget of approximately 2.5 billion euros. (Eventually the costs projects were 4.7 billion euro, Ministry of Transport, 2007b) Calculations showed that private investors would be able to recover this upfront investment during the operation phase by user fees. Privatization became a major issue during the 1993 decision-making process. In Parliament, the minister of Transport claimed that no shovel would go into the ground before private financing had been secured.

At the time of the 1995 reconsideration, the budget had risen to 3.74 billion due to politically inspired scope changes meant to reduce societal resistance against the project. Although the idea of a private contribution was upheld in the 1995 reconsideration, the privatization strategy changed; there would be no delay while waiting for 'up-front' private contributions, and construction began. The privatization model also changed. Private *financing* had been the earlier objective, and it had been discussed with financial institutions. The new Minister of Finance advised against this, as public financing is less costly than private financing, for government can borrow on the capital market at a lower interest rate. Privatization was considered useful only if this difference could be compensated by gains in efficiency. Private *operation* therefore became the new objective. Allowing future operators, service providers

[1] This secondary analysis is based on the empirical data as presented in the report of the Duivesteijn Committee (in: Tweede Kamer, 2004-2005b).

and clients to invest in the project would give these parties an interest in furthering the use of the railway. These strategic investors would be able to influence and reduce risks and costs, unlike financial institutions, who will therefore calculate high rates of interest.

3.3 Implementation of the Privatization Strategy

By 1998, private involvement had not yet been achieved. Because construction could not wait, the government opted for prior public financing. The physical foundation for the railway, the substructure (foundation, tunnels, viaducts), was contracted out in the traditional manner. Based on recommendations from a market exploration, the superstructure (support bed, rail line, overhead wiring, security and management systems, noise barriers and telecommunication systems) was tendered in 1999. The Ministry of Transport decided not to use the originally preferred DBFM (Design, Build, Finance, Maintain) or DBM (Design, Build, Maintain) contract for the superstructure. The various component systems were contracted out in the usual way. It was stated that these innovative contracts were a new way of working, and this mega-project thus came with difficult risks to be managed (Tweede Kamer, 2004-2005c, pp. 288-296).

The market exploration also showed that private parties were unwilling to participate as risk takers in the operation, and the tender procedure was postponed. The government would operate the line. Nonetheless, a development trajectory was initiated in which the government would work with private companies on the improvement of the transport facilities, after which contracting out would again be considered, possibly after 2010. Meanwhile, users would pay for the line through user fees. It was believed that this plan could eventually generate 830 million euros in private contributions.

In 2002, a study commissioned by government, showed that the user fees would be insufficient to cover the costs of operation. Not only the government had failed to realize private contributions to the construction of the project, the government would also have to cover operation deficits for years. Based on this information, Parliament adopted the Hofstra Motion, which called upon the government to negotiate with the private sector in order to prevent operation deficits for the government. The minister of Transport asked the Port of Rotterdam Authority and ProRail (the public organization that is responsible for the construction and operation of the Dutch railway infrastructure system) to develop a business plan for the operation that would cover the costs. The business case that was designed by ProRail and Port of Rotterdam Authority in 2004 assumed losses in the tens of millions of euros in the first few years.

Eventually Keyrail, a joint venture of Prorail and the Port Authorities of Rotterdam and Amsterdam, was granted a 5 year concession to operate the railway. Keyrail is supposed to look for commercial partners to participate. Government will contribute in this period 76 million euros to the operation, apart from other cost, like a compensation for the user fees that are imposed on the users, and risks that the contract assigned to government (Ministry of Transport, 2007b).

3.4 Conclusion

The privatization of the Betuwe Route was a failure. Private parties did not invest in the construction of the railway and government has to contribute substantially to the costs of operation. Neither did the pursuit of privatization contribute to the rationality of the process of decision-making and implementation. The project exhibits nearly all of the symptoms of

the 'public scenario' that was outlined by Flyvbjerg et al (2003a). Because the Dutch government wanted to realize the Betuwe Route at all costs, the intention to have private financing secured upfront was ignored. Privatization was not a condition sine qua non, and it therefore did not exert a disciplining influence over the political process.

4. Privatization and the High Speed Line South[2]

4.1 The Project

In 1986, the European ministers agreed upon the further development of the European High Speed Line (HSL) network. The plan included the construction of a line from Paris to Amsterdam. From that moment on, preparation for the HSL South was underway. The government presented its plans for the project in 1994. By the end of 1996, a decision was made to select an alignment on the shortest and quickest route between the Belgian border and Amsterdam. This route, however, would cut across 'het Groene Hart' (the Green Heart), a protected, open area between the urban agglomerations in the western part of the Netherlands. This problem was resolved by including a nine-kilometre long tunnel under the Green Heart, at a cost of 414 million euros. The total project budget in 1994 was 2.7 billion. By the time of the government decision in 1996, the figure had risen to 3.4 billion, and it is currently expected the project to cost 6.3 billion. Recently the start of the operation, foreseen in 2006, has been postponed several times. Especially the installation of the new innovative European safety system ERTMS and the late delivery of rolling stock cause delays. In December 2007 a restricted service will be started on the northern part of the line. The system is planned to be fully operational by October 2008, although the Minister of Transport has warned that this is not for sure (Ministry of Transport, 2007d; Dutch General Audit Office, 2007).

4.2 Privatization Objectives and Strategy

As with the Betuwe Route project, private involvement has been one of the objectives of the HSL South project from the beginning. The size of the private contributions was based on the availability of public means and amounted to 830 million euros, about the same as what was expected for the Betuwe Route.

The privatization strategy was not formed until 1998, after decision-making had been concluded and the programme of requirements had become available. Until then, it had been assumed that traditional contracting out would be pursued by means of twenty-one separate contracts. Because Parliament and the Ministry of Finance had asked for results in the area of public-private partnerships in 1999, after a market consultation, the Ministry of Transport decided to pursue maximum privatization for the HSL. The idea of a single contract was rejected, however, as such a contract would be difficult to manage and competition would be limited by the fact that few private companies could handle such a large contract. Eight design-and-build contracts were decided upon for the foundation structures of the rail line, including one for the tunnel under the Green Heart. The superstructure (the infrastructure

[2] This secondary analysis is based on the empirical data as presented in the report of the Duivesteijn Committee (in: Tweede Kamer, 2004-2005c).

provider) and the transport service delivery would be tendered in the form of a DBFM and operation contract respectively. The government would be responsible for coordinating the contracts.
The D&B contracts for the substructure were intended to give the contractors maximum flexibility for completing the foundation more quickly, at a lower cost and better. The DBFM contract for the superstructure provided room for far-reaching optimizations. The operation contract would generate payments to the government, thus realizing the private contribution to the project.

4.3 Implementation of the Privatization Strategy

In 1999, the government started the tender procedures for all HSL contracts at the same time. Contracting out the tunnel under the Green Heart proved relatively easy. Foreign companies participated, and innovative proposals led to significant cost reductions. Offers for the other contracts, however, created a panic on the side of government (Tweede Kamer, 2004-2005f, pp 477-528). The total costs based on the offers amounted to 2.54 billion euros; 43% higher than the allowable budget of 1.78 billion. It was later revealed that private consortia had made a number of illegal agreements, but these agreements were not the main cause of the exorbitant figures. More important factors were the lack of competition due to the simultaneous contracting-out of a number of large government projects and the high-risk insurance that the companies wanted.
Informal, secret consultations that were held with all bidders together in the hopes of persuading them to lower their bids turned out to be fruitless, and government stopped the tender procedure. The Arbitration Council, however, deemed this decision unlawful, as the government had not formally negotiated. The government then attempted to lower the bids by agreeing to cutbacks and the transfer of risks back to the government. The contracts, which were valued at two billion euros, were eventually signed in July 2000. The final version reflected cutbacks (euphemistically called ‘optimizations’) of approximately 540 million euros from the original private bids. The ultimate bid was 265 million higher than the expected contract value (220 million euros plus an amount of 45 million euros, as parts of the substructure contract had been shifted onto the infrastructure provider contract).

Table 1. Development of contract value during negotiations on the substructure contracts

Specification	Amounts in Euros
Initial estimate contract value by government	1.78 billion
Original bid contractors substructure	2.54 billion
Difference	760 million (43%)
Optimizations realized during negotiation	540 million
Ultimate Contract value	2 billion
Difference between initial estimate by government and realized contract	220 million
Components removed out of the contract	45 million
Total difference between estimated and realized contract value	265 million
Uncertain optimizations (Lloyds risks analysis)	340 million

The contracts were so complex that no one within the Ministry of Transport really knew what the consequences would be. At the urging of the departmental accounting agency and the directorate of Financial Economic Affairs, Lloyds conducted a risk analysis. The analysis concluded that only 200 of the approximately 540 million euros in realized optimizations

were certain. Furthermore, there was a loss of quality, and the government had reduced important risks for the private parties by abolishing a penalty clause for contractors in the case of late delivery. During the subsequent execution of the substructure contracts, it appeared that the calculated optimizations were not achieved and much unexpected additional work occurred. Meanwhile, the costs of the substructure remained close to the original bid of the companies. The cutbacks that had been achieved during negotiations had been either not realized or rendered irrelevant because of the risks that materialized during implementation.

In November 2001, the *contract for the infraprovider* was awarded to a consortium named Infraspeed. This consortium would deliver the superstructure on January 1, 2006 and would then receive an annual compensation of approximately 100 million euros for 25 years, in exchange for ninety-nine percent availability. Translated over the total period, this involved a sum of 1.08 billion euros.

In early 2001, there were three bids for the *transport service delivery contract*. Whereas the other consortiums had wanted to pay an annual user fee of about 100 million euros, the Dutch High Speed Alliance (HSA) consortium of NS (the former state monopolist *Nederlandse Spoorwegen*, Dutch Rail), KLM (Royal Dutch Airlines) and Schiphol Airport offered 160 million. The contract was signed in late 2001. HSA acquired the transport rights for a period of fifteen years, in exchange for an annual user fee of 148.4 million. This amount was higher than the availability fee that government had to pay to the infrastructure provider. The surplus would made 450 million euros available for the 2010-2020 period. Together with the 450 million euros that had been provided through the contract with infrastructure provider, private contributions to the rail infrastructure would exceed the budgeted 830 million.

The contract included an agreement that allowed the government to approve a tariff restriction combined with a reduction of 47 million euros in the annual user fee. As a consequence of this clause, a discussion emerged in Parliament about how the savings should be used. Remarkably, NS and KLM lobbied for the tariff restriction, in order to reduce the user fee. In order to secure its monopoly, NS had apparently offered a very high bid that it now wanted to see reduced.

During the construction phase several problems occurred that were not foreseen. Especially the installation of the new innovative European safety system ERTMS – part of the infraprovider contract - and the late delivery of rolling stock caused delays (Ministry of Transport, 2007d). Eventually the extra cost government has to bear as a result of risks that occurred during construction come to 499 million euros. Furthermore, due to the postponement of operation, the HSA will start paying the user fee later: a loss of 222 million euros. What is more, since French and Belgium carriers want less train services as foreseen in the contract between government and HSA, the user fee will probably end up lower than agreed upon. Since the number of passengers in forecasts has declined, it is expected that the HSA will become a loss-making company, as a result of which the service provision in the long term is not guaranteed without further subsidy (Dutch Audit Office, 2007; Ministry of Transport 2007c).

4.4 Conclusion

The Dutch government claims the privatization of the HSL South – particularly the contracts for infrastructure and transport – as a major success. Their claim is debatable. The success is based on expected future income, which is far from sure. Especially the contract with the HSA does not ensure a stable service provision. Furthermore, the government took back a

number of risks in the contracts, which may have a negative influence on the ultimate result, most notably with regard to the delivery risk. The infrastructure and transport contracts obliged the government to pay 23 million euros each month in case of late delivery. The removal of the penalty clause for contractors from the foundation contract has generated significant additional risks for the government. Particularly the risks resulting from the interfaces between the contracts are badly addressed.

While the success that the government claims with regard to the infrastructure provider and transport contracts is dubious, there is little doubt about the failure of the D&B approach concerning the substructure. The only positive point in this respect was the successful bid of the tunnel under the Green Heart.

As with the Betuwe Route, privatization did not stimulate rationality in either the decision-making process or the implementation of the project. Although the political decision regarding the HSL was made in 1996, the privatization strategy was not decided upon until 1999. This was too late to wield any real influence over the planning process. An additional complication, which is not considered in the framework of Flyvbjerg, was that the bidding process got out of hand due to a badly designed and implemented privatization strategy.

5. Lessons from the Betuwe Route and the HSL South

The analyses of the Betuwe Route and the HSL South show that the government was unable to organize the involvement of private parties adequately. There are a number of causes for this.

To begin with, unfavourable contextual conditions made it difficult to realize the privatization objectives. For example, the features of the projects made private involvement far from self-evident. The projects were complex, politically sensitive and highly intertwined with their environment, making business opportunities uncertain.

Furthermore, the Betuwe Route was particularly poorly defined and contested. During the 1990s, the railway industry was deregulated. Dutch Railways was being reorganized, and the company's cargo carrier was privatized. Dutch and European policy regarding freight transport and rail in general was in flux. Market developments were also uncertain. The market for rail freight was weak, and the space for investments was limited. In addition, the dubious profitability of the Betuwe Route made private contribution a relatively unrealistic prospect.

These contextual factors explain only part of the difficulty, however. The reasons why the government failed to address these factors adequately (e.g., by moving away from privatization) and why it continued to pursue a dysfunctional privatization strategy remain unclear. According to the government, the privatization of the Betuwe Route failed because of a lack of private-party commitment. However, the Duivesteijn Committee's report shows that other factors were also at play: lack of support from the executive branch, lack of expertise and experience with professional procurement practices and the absence of attention and steering from the bureaucratic and political top (Tweede Kamer, 2004-2005b and c).

The problems with privatization in the case of the HSL South project are harder to explain. The project itself was not contested. That government proclaimed the project profitable. There was political will and private interest. A lack of skills and expertise is the obvious remaining explanation. The government expected to maintain complete control over the project through contracting out. Having committed to a task-oriented budget, the discussion

mainly concerned the reduction of costs and risks, allowing no leeway for seeking optimizing design solutions. The discussion became a zero-sum rather than a zero-plus game. Because the government simply wanted the project and felt committed to its own planning, its negotiating position was weak. The situation became a pressure-cooker, forcing the government to accept the results of negotiation even though it did not quite understand its implications. The lack of expertise and the over-estimation of its abilities trapped the government in a complex web of contractual relations that far exceeded their own competency and capacity.
In the next section, we examine the extent to which government put the lessons of Betuwe Route and the HSL South in practice while drawing up its privatization strategy for the Zuiderzee line.

6. The Zuiderzee Line: an attempted improved approach[3]

6.1 The Project

The Zuiderzee Line concerns the project study for a fast rail connection between the densely populated western part of the Netherlands (with Schiphol Airport near Amsterdam at one end of the line) and the relatively peripheral north-eastern regions of the country (with the city of Groningen at the other end of the line). It was part of the 'Langman agreement' between central government and the northern regional authorities; an investment programme to strengthen the economy in the North. During the project study phase, the national government has considered three modality options:

- a conventional railway line for intercity trains;
- a high-speed railway line;
- a magnetic levitation (Maglev) line of the German Transrapid consortium. There are two sub-options: a connection with five stops and a connection with eight stops.

After publication of the reports of the Parliamentary Inquiry on Infrastructure Projects, national government reconsidered its support for the project, which was on the verge of entering the design phase. In its reconsideration the Government extended the research with two options:

- alternative investments in the northern provinces;
- the "super bus" concept (a newly developed type of passenger bus that can travel at high speeds).

There were also a number of alignment options. The most important was the Zuiderzee Line route, a completely new connection that would run through the provinces of Flevoland, Friesland and Groningen. Another possibility was a route that would follow the Hanze Line, a rail connection that is to be constructed in the years to come, and which could be upgraded. Additional options existed in the Amsterdam area.
Prior to the reconsideration, central government was willing to invest 2.73 billion euros for the fast options. Regional and local governments are prepared to provide a maximum contribution of slightly more than one billion euros to these fast options. The rest of the

[3] This secondary analysis is based on the empirical data as presented in the report of the Duivesteijn Committee (in: Tweede Kamer, 2004-2005d)

money (several billions of euros) must come from private parties. The investments can be earned back through a DBFMO concession to operate the line commercially for thirty years.
The reconsideration, however, led to new studies of all the alternatives, including the two new options (Ministry of Transport et al. 2006). As the studies yielded negative results for all options the Government discontinued its policy to proceed with the project, though the project never disappeared from the political agenda. In the remainder of this section we will take the implementation plans, based on the new Integrated Alignment/EIA Contracting procedure as a point of departure (see next paragraph). They have not been adjusted since. It is likely that if the project is to be continued, the conditions will be the same.

6.2 Privatization Objectives and Strategy: A New Procedure

A primary goal of the national government in the privatization of the Zuiderzee Line project was to avoid the budget overruns that occurred in the Betuwe Route and HSL South projects. Therefore, the Ministry of Transport developed an integrated Alignment, EIA[4] and tendering procedure. In the new approach private investors have to bid and commit to this bidding early in the process, to ensure that no spade goes into the ground before private financing has been realized. This strategy assumes that, if the market is prepared to invest under this condition, the quality of the project is assured (otherwise private parties would not invest). The government should run no risk, even if the actual costs should exceed the estimates, as the private investors bear the ultimate responsibility for any excess costs. The Ministry plans to use this tendering and design model in all new large infrastructure projects.
The new procedure specified four important conditions:

1. The national government's contribution was an all-in amount (including risk reserves of between 26 and 27%) with an explicit cap.
2. The national government was planning to operate according to the 'the one who changes, pays' principle. This means that any party that desires changes (e.g. extra noise barriers, an extra tunnel) after the programme of requirements has been set, must bear the costs of those changes.
3. The beginning of the tender and contracting procedure was to consist of a competition that would also determine the programme of requirements. Private bids must always be committed.
4. The planned procedure includes five 'go/no-go decisions' that allow the government to decide whether to continue with the procedure. The final decision is at the end of the procedure, so government can withdraw until the end.

[4] EIA = Environmental Impact Assessment.

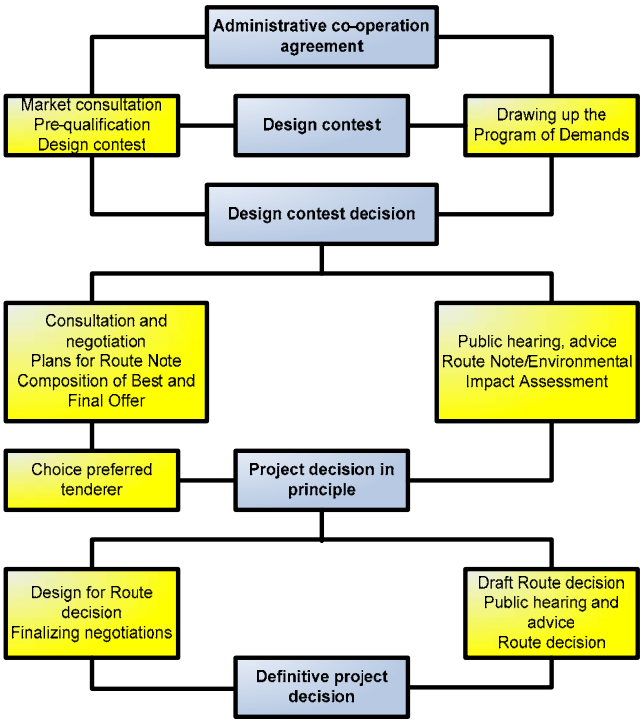

Figure 2. A simplified image of the integrated Route/EIA[5] Contracting Model for the Zuiderzee Line with 'go/no go decisions' in the middle.

6.3 Implementation of the Privatization Strategy: Would the Precautionary Measures Work?

Would the assumed advantages of privatization have been achieved? Because the project was halted, no analysis based on experience is possible. Nonetheless, building on our analyses of the Betuwe Route and the HSL-South, we can expect the following:

- Determining an absolute maximum for the government's contribution will create more uncertainty for private parties. Any unexpected costs that are added will be deducted from the included risk reserves of between twenty-six and twenty-seven percent. The budget overruns that Flyvbjerg et al. (2002) calculated from practice were significantly higher than the buffer that is used here (approximately 45 percent). What happens if the costs are higher? Deducting the overruns from the remainder of 2.73 billion euros makes the conditions less favourable for the private party. The private party will take this into account when bidding.
- Large infrastructure projects are likely to be subject to the proverbial 'camel-nose effect'. This means that many extra costs will arise (e.g., connections to stations, nice railway station buildings), often at the expense of the government.
- The government's ability to hold to its maximum contributions under the 'the one who changes, pays' principle is debatable. In practice, it seems that scope mutations are often caused by government. Private actors seldom request extra noise barriers or similar

[5] Environmental Impact Assessment

changes, and they will certainly not do so if they must pay for them.[6] The new mandatory national spatial planning and environmental policy procedures (the integrated Alignment/EIA Contracting Procedure) specify that the programme of requirements must be set prior to any public hearings. The government must bear the costs for any additional measures that result from these hearings. A capped governmental contribution thus appears incompatible with the 'the one who changes, pays' principle, and there is no readily available alternative. If private investors must cover scope mutations, their bids will be very unfavourable, particularly since private investors are expected to be committed to their initial bids. In turn, the government does not commit itself, thus maintaining the opportunity to withdraw at any time, in case of a negative go/no-go decision.

- Although the Second Chamber of Parliament also seeks to allow conventional variants to private bidding, no concessions can be involved there, as the management and operation of the existing rail lines are already under concession to ProRail (the infrastructure) and NS (transport) respectively.
- The integrated Alignment/EIA Contracting Procedure compares apples and oranges, with three separate decisions remaining open: the modality choice, the route choice and the choice for a private contractor. Confusion amongst these choices complicates matters even further.
- The national government would like to enter the elaboration phase with two consortiums (one preference option, one fallback option). The legal procedure for determining the alignment, however, can be executed for only one alignment at a time. Alignment options are tightly connected to modality options. Some alignments or modalities may receive only one bidder (e.g. Maglev), although two are required for this set-up. So, in case of, for example, a Maglev line as preferred option the fallback option will always have different conditions and a different alignment.
- In the case of the Zuiderzee Line, there are certainly many problems in allowing private investors to assess the feasibility of the project. For example, private consortiums may not have an interest in taking the violation of such public values as nature and landscape into account.

6.4 Conclusions about the new PPP Strategy

The new way of working appears to involve a significant 'sink or swim' component. Private parties must commit financially and legally to bids about which many conditions are still unknown. This situation is ultimately not in the government's best interest, as it may generate unfavourable bids taking many risks into account – or no bids at all.

The PPP strategy also does not solve the problem of irrational decision-making. The necessity and desirability of the project are surrounded by many uncertainties and doubts. Privatization did not prevent the government from giving premature assurance about this project to the provincial governments in the Northeast.

[6] In their article "Betuweroute als 'best practice'" of June 19, 2007 in the Dutch paper NRC Handelsblad, Bent Flyvbjerg and Eddy Westerveld contend that the cost overruns of the Betuweroute project mainly developed in the preparation phase in a context of societal turmoil; not in the 'technocratic' implementation.

7. Conclusions

The analyses of the Betuwe Route, the HSL South and the Zuiderzee Line show that Dutch government has not yet been able to develop a successful approach to privatizing large railway projects. In addition, its attempts at privatization have not enhanced the rationality of the decision-making procedure for these projects through PPP.

Flyvbjerg and his colleagues (2003a) claim that private involvement will discipline the public decision making process, since this makes it necessary for government to take three chronological steps: 1) define the project and conditions, 2) secure private involvement and 3) decide to realize the project.

This sequence differs from the course that was observed in the three Dutch railway projects that were up for privatization. In the cases of the Betuwe Route and the HSL South, the government began with the decision to realize the project. The government failed to find private partners for the Betuwe Route, as the project was not defined clearly and the conditions for success were uncertain. In the HSL South project first the project decision was taken, next the conditions were assured and finely the private parties involved. As a result the opportunities for private parties to influence the risks were limited; they focused their energy on covering instead of reducing risk. No integral design optimizations were realized, expensive bids were submitted, the government had to take back risks and, finally, operational risks generated major budget overruns. With the Zuiderzee Line, the government intended to first seek the commitment of private parties; then specify the conditions and next make the project decisions. With this approach, the government hoped to maintain a grip on the process and shift all of the risks to private parties.

The three cases show that it is difficult for government to develop a realistic understanding of market conditions and the motives of market parties. It apparently assumes that private parties are eager to participate in public infrastructure as a way of entering new, profitable markets. The government therefore presupposes that it can determine the conditions of private involvement unilaterally and shift most of the risks to private parties. Government fails to recognize, however, that private parties will participate only if there is a reasonable expectation of profit and if the risks are manageable. If private parties can influence the definition and the conditions of the projects, they are able to influence the risks prior to the start. If this is not possible, they will have to protect themselves against these risks, which results in less favourable bids. The government's desire to shift political and policy risks to private parties will come at a high price.

Table 2. Sequences of strategies applied

Flyvbjerg c.s.	Betuwe Line	HSL-South	Zuiderzee Line
1) Specify project definition and conditions	3) Final project decision	3) Final project decision	2) Involve private parties
2) Involve private parties	2) Involve private parties	1) Specify project definition and conditions	1) Specify project definition and conditions
3) Final project decision	1) Specify project definition and conditions	2) Involve private parties	3) Final project decision

Accepting that the sequence of events in each of the three projects was unsuited still does not answer the question of what the right approach may be. Is it the scenario that was suggested by Flyvbjerg et al? Their approach seems to be heavily inspired by the rational-synoptic

model of decision-making, according to which the rationality of processes can be improved by structuring them according to a number of sequential steps: think first; then act. The extent to which this organizational principle is applicable to the complexity of infrastructure mega-projects remains to be seen (compare Tweede Kamer, 2004-2005a). Furthermore, Flyvbjerg et al. seem to suggest that one dominant, standarized and agreed upon method of organizing public private partnerships exists. Our review of forms of and experiences with public private partnerships shows that this is far from true. We suggest that Flyvbjerg's scenario is applicable only in simple, routine, well-understood projects (e.g., standard highway projects). His approach does appear less suitable to the features of highly complex infrastructure mega-projects. In the case of the Betuwe Route, it is unrealistic to expect the Ministry of Transport to address all of the uncertainty concerning the developments in the rail way industry, the transport policy and the rail-transport market before the decision-making process begins.

If complex infrastructure projects cannot develop sequentially, the method suggested by Flyvbjerg can not be used. What alternatives remain? One option would be to drop the idea of private involvement. This would mean a return to public project preparation and implementation. Because this alternative has to do without the disciplining potential of private involvement, government has to improve the public decision making process on infrastructure. How to achieve this remains a major challenge.

The second alternative would be to start out with less extensive forms of private involvement regarding well-demarcated and defined components of complex projects. This strategy could create learning trajectories by which experience and expertise regarding private involvement in public projects is gradually generated. This capacity building strategy allows governments to pursue private involvement in projects that are progressively more complex.

A third alternative would be to opt for an alliance model, in which public and private parties engage in special purpose vehicles, sharing benefits, costs and risks. This model institutionalizes interdependencies to ensure the commitment of partners to the success of the project under conditions of uncertainty.

The three projects that we have examined show how easily governments overestimate the possibilities of private involvement in public projects, and how poorly they understand the conditions that determine the success or failure of these endeavours. Gaining more insight into these conditions and the ways in which they can be improved seems to be the first challenge in the further development of private involvement in public infrastructure projects.

Acknowledgment

This publication is the result of the research that was conducted in the context of the Research Centre for Sustainable Urban Areas at the Delft University of Technology and the project Risk Management of Delft Cluster (a collaboration of Geo-Delft, TNO Bouw en Ondergrond, Unesco IHE, and the Delft University of Technology).

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